

**BMS COLLABORATIVE LEARNING TO ANSWER THE CHALLENGES  
TOWARDS THE ENGLISH TEACHING AND LEARNING DURING THE  
PADEMIC OF COVID 19 VIRUS**

**Nina Khayatul Virdyna, M.Pd**  
The Faculty of Tarbiyah IAIN MADURA  
Jl Raya Panglegur Km.04 Pamekasan  
[Ninananang.kazganilma@gmail.com](mailto:Ninananang.kazganilma@gmail.com)

**Abstract**

Corona virus has ruin all factors of life in the world. The most fact is in the education life. The students are suffer by the non-active school activity for some while. The teacher are suffer from the difficulties to bring the material to the students. The government has offer a lot of solutions. But some countries with some background of economic and geographical factors may suffer some problems. Here, the magic of a teacher, he has the authority to give the solving toward these problems. On these article the author offers three solution method of teaching and learning over the pandemic. The learning that the author offer is Blended learning, Mobile learning and STEAM learning. Those learnings will become the alternative solution for teaching English during the Pandemic. The collaboration of those will be use in one meeting or one session of English teaching and learning.

**Keywords;** BMS Collaborative Learning, Challenges, Blended Learning, Mobile Learning, STEAM learning  
Pandemic of Corona Virus

**A. Corona Virus Spreading in 2019**

Coronavirus disease 2019 (COVID-19) has now become a global public health threat, with many impacts on medicine, ethics, economy and society. COVID-19 has spread globally to many Asian and Middle Eastern countries, the United States of America and European countries. The current COVID-19 pandemic in Indonesia has infected and killed more medical staff, especially doctors and nurses, than any other outbreak in the history of the virus. Only when people have basic needs can they feel safe and secure. Before exploring the impact of the virus on

Indonesia, a brief introduction to the history of the COVID-19 outbreak. During this exploration process, some key issues arising from Indonesia's experience in responding to the threat of COVID-19 will be reviewed. We take COVID-19 as an example and consider the way that the concept of human safety expands people's understanding of its relationship with health. Further, we show how major public health issues can evolve into security threats. The final section of the article will be an analysis of the lessons learned from COVID-19 and policy implications in

addressing health and human security threats.

The world triggered by the COVID-19 pandemic is facing an unprecedented global health and socioeconomic crisis. In Indonesia, the lives of millions of children and their families have improved. Blockades and school closures are affecting their education, mental health, and access to basic health services. Since the first case of COVID-19 was reported in Indonesia, UNICEF has been working with the government, the World Health Organization and other partners to tackle the pandemic. The number of COVID-19 cases and deaths across the United States is on the rise. All of us must remain vigilant. The changes we have to make to our daily lives and daily lives are very difficult, but these changes will become especially important now and in the future. We must stop spreading this new dangerous virus. The more steps you and your family can take to prevent the spread of COVID-19, the safer you will be.

COVID-19 is not just a global health crisis-it is an economic crisis, a humanitarian crisis, a security crisis and a human rights crisis. The pandemic illustrates how the nature of risk has changed: it is systematic, combined and

cascading. The crisis has also caused severe systemic inequality. The new coronavirus will affect everyone in every place, but it will not affect everyone equally.

## **B. Corona Virus In Indonesia**

Between 11 to 14 August 2020 WHO supports the Ministry of Health in the In-Action Review (IAR) of Indonesia's COVID-19 response. The IAR is a comprehensive multisector qualitative review of actions undertaken thus far in response to an ongoing emergency. This is a valuable mechanism for identifying gaps and opportunities for learning and improvement to better respond to the COVID-19 outbreak.

In accordance with the recommendations of the Fourth Meeting of the Emergency Committee of the International Health Regulations (2005) in July, Indonesia conducted IAR. This meeting was convened by the WHO Director-General and it highlighted the importance of continuous collective learning by bringing together relevant stakeholders to critically and systematically analyse actions undertaken in an emergency response.

In Indonesia, IAR comprehensively covers the nine key pillars

of COVID-19 response: 1) Command and coordination; (2) Risk communication and community authorization; (3) Supervision, rapid response teams and case investigations; (4) Entry points, International travel and transportation; (5) laboratories; (6) infection control; (7) case management; (8) operations and logistics support, and (9) maintenance of basic health services and systems. It also includes community transmission settings and special considerations for low-volume and humanitarian settings.

WHO presented the overview of Intra-Action Review (IAR) as part of preparedness and response cycle in line with International Health Regulations (IHR) and pandemic risk management.

Preparation for the IAR began in July with the formation of a core management team and identification of training facilitators spanning the nine pillars. The core management team conducted a thorough desk review of standard operating procedures, guidelines, policies, reports, and a timeline of milestones of COVID-19 response actions. Between 15 and 17 July, the findings of the desk review were presented to the key stakeholders. This was followed by an orientation on the IAR

scope and process to stakeholders on 28 July. On 29 July, WHO supported a facilitator training to equip participants with specific techniques and tools necessary for the IAR referring to WHO IAR guidelines. The moderator is selected from leaders who have assumed responsibility in the nine pillars of the COVID-19 response, giving them ownership of the IAR pillar activities and ensuring their commitment to improving the response.

A briefing of the facilitators on 5 August served as mock session to ensure smooth IAR implementation with the broad range of stakeholders. The facilitators were able to promote interactive discussion among stakeholders of each pillar.

Questionnaires were also filled by all IAR participants to capture the participants' inputs on the successes and opportunities for improvement of the COVID-19 response to date. Information from these documents complemented the interactive qualitative discussion during the IAR. The IAR was held virtually from 11 to 14 August. It brought together many stakeholders from different sectors including the Ministry of Health (MoH), National Disaster Agency, Secretariat

Cabinet, Information and Communication Ministry, armed forces, and representatives from Provincial Health Offices, hospitals, primary healthcare centers and other international partners such as FAO, UNICEF, UN-OCHA, IFRC, WFP and ILO. Since the outbreak of COVID-19 and the declaration of the health emergency, Indonesia has adapted its operational response plan, conducted risk assessments and put in place numerous activities to combat the spread of disease and secure the welfare of Indonesians.

IAR has studied response plans, reporting systems, and activity implementation to identify practical areas where the ongoing COVID-19 response can be corrected and continuously improved. Among other things, IAR's recommendations include improving command and coordination among multisectoral stakeholders at the national and subnational levels, regular monitoring of response plan indicators (including surveillance and laboratory coordination), and implementation in health institutions. Better classification to avoid contact between patients and medical staff. The health workforce reaches COVID-19. It is also believed that

the implementation and monitoring of large-scale social restrictions through the delivery and participation of key COVID-19 messages and empowering communities to act as change agents are also considered areas for improvement. In addition, IAR recommends improving telemedicine to prevent COVID-19 exposure and maintain basic health services such as immunization, tuberculosis, HIV and non-communicable disease programmers.

It will now be the responsibility of all stakeholders to implement the recommendations agreed upon during the IAR. These recommendations will be used as inputs to review the current COVID-19 response plan in Indonesia and the IAR stakeholders will play an active role in reviewing and monitoring the COVID-19 response indicators. The outcomes of the IAR will also contribute to the Partners Platform and the annual IHR State Party Annual Reporting to the World Health Assembly where Indonesia will share their IAR learning experiences to regional and global committees.

Overall, the IAR brought together multiple stakeholders of the emergency response to agree on tactics to further improve the preparedness and response

capability for the current emergency facing Indonesia. Through a systematic, constructive and collective learning opportunity, the IAR has feed a number of recommendations to be implemented to strengthen the national COVID-19 response. Leadership, commitment and teamwork from the core management team, facilitators and all stakeholders were key to the success of the IAR.

### **C. Challenges In Teaching Higher Education During the Pandemic**

Many countries recommend different levels of containment measures to prevent the spread of coronavirus or COVID-19. Because of these concerns, schools and universities are closing and suddenly turning to online platforms and distance education. This sudden change makes us ask: "What is the impact of the coronavirus on education?" The concerns surrounding the virus and the efforts to contain it are due to a lack of prior experience. Since the virus was previously unknown, highly contagious, and easily spread from one person to another, public health and government officials around the world are working to contain the spread of the virus while there is still no vaccine.

In order to curb the spread of the coronavirus, public places such as schools, universities and offices will be closed so that people can stay at home and prevent its further spread. In countries such as China that have adopted inspection and quarantine measures, this spread has been quelled. Measures taken to reduce the infection rate include social distancing, restrictions on the scale of incidents, and family isolation when necessary. Closing schools and offices ensures that people can limit interaction with others and slow the spread of the virus while responding to the pandemic with the healthcare system.

Under such circumstances, there are bound to be many problematic issues when talking about education.

#### **1. Delays**

Standardized tests and school admissions have been postponed nationwide. Some states choose to cancel or postpone standardized tests, while others consider extending the school year due to delays and many missed days. As faculty and staff adapted to the new online platform and tried to convert their materials into new teaching methods, classes and semesters were postponed. This includes learning how to use online

tools, figuring out how to convert hands-on learning materials or discussion-based courses to a new platform, and possibly changing the entire learning plan due to the inability to switch to an online platform.

## **2. Challenges for staff and students**

As school and university staff learn how to convert their courses into online platforms, students and staff are learning how to handle distance learning and communication. Although technology has played an important role in most school affairs, the new reliance on technology in all aspects of education has been forced to happen overnight, which puts many people in the midst of technical difficulties and the challenges of studying and studying at home. Struggling to build an effective timetable outside of the school environment.

## **3. Challenges for low-income families**

Unfortunately, many families not only rely on the public school system for education, but also on necessities such as food and childcare. With the cancellation of schools, many students cannot get proper meals, and parents are forced to take

vacations to take care of younger students. Although many schools continue to access the Internet, many students cannot use computers or the Internet at home. Without the right technology, many students will be forced to miss their studies until further solutions can be arranged.

## **4. Concentration difficulties**

Younger students, as well as students with ADHD or other special needs, find it difficult to concentrate on using online education tools. Young students need the help of in-person lectures, and may find it difficult to concentrate on the typical positive classes conducted on the computer. Students with special needs also rely on personal guidance and may find it particularly difficult to switch to an online platform.

## **5. Students can be mentally disturbed**

The Corona pandemic that has not yet met a vaccine is still a big concern for students' mental. The absence of certainty about how long schools will be closed can reduce student motivation to learn. Sometimes also because the workload given to online learning is too heavy, where the government is forced to

impose an online learning system in lieu of closing schools. The assignment given is sometimes not balanced with the understanding of the material obtained. This will affect the student's mentality in the long run.

#### **6. Practicum and field studies cannot be done**

The laboratory research that must be done outside the classroom and the exercises that must be completed in the field research (which is currently not possible) also determine the student's level of understanding of the learning materials. Under the current Covid-19 conditions, graduation is one of the best moments for educational achievement, and it is also impossible to achieve..

#### **7. Studying abroad is hampered**

Not only that, students who have graduated and want to continue their studies abroad are also hampered by this Coronavirus. This will certainly cause disappointment and affect the continuation of the study.

#### **8. The number of complaints**

Not all regions in this country have adequate facilities and infrastructure.

The policy to impose online learning has encountered many complaints because the facilities and infrastructure cannot support online learning. During the Covid-19 pandemic, complaints about the absence of an Internet network due to the continuous expansion of the region or the limited cost of purchasing Internet quotas are still disputed. In fact, the impact of the Covid-19 pandemic does require widespread attention so as not to disrupt the country's education flow. This impact will be increasingly threatening if the steps taken are not optimal, which can cause a decline in the quality of education. Overcoming this threat, we need to work together in order to stay focused on taking the best steps to secure the sustainability of the world of education. There may be situations in the future that we cannot predict. However, by continuing to work together to contribute to the world of education, we will be able to achieve the goal of achieving a more advanced Indonesian education.

#### **D. Teaching And Learning Over Pandemic of corona Virus**

The Covid-19 pandemic forces people to adopt social distancing policies, or to introduce physical quarantine (to maintain physical distance) more widely in Indonesia to minimize the spread of Covid-

19. So, this policy is being pursued to slow down the rate of spread of the Corona virus in the community. The Ministry of Education and Culture (Kemdikbud) responded with a policy of studying from home, through online learning and this year following the elimination of the National Examination. All the students of all level are studying on this situation. They have to keep studying but without offline learning because of the social distancing. Blended learning, Mobile learning and STEAM learning can be the best solution on this teaching and learning proses during the PANDEMIC. Online learning or what we call as E-Learning can be one of the solution of the teaching learning during pandemic since social distancing is a must. But e-learning is not enough. Some problem still following this solution. Still on strict to the concept of social distancing, E-Learning should be elaborate by the other learning which are Blended Learning, Mobile Learning and STEAM Learning.

### **1. Blended Learning**

Semler says, "Blended learning combines the best aspects of online learning, structured face-to-face activities,

and real-world practice. Online learning systems, classroom training, and on-the-job experience have their own major shortcomings. The blended learning approach uses the strengths of each to counter the others' weaknesses<sup>1</sup>."

Blended learning is an easy-to-learn learning method that combines a variety of teaching methods, teaching modes and learning methods, and introduces a variety of media options to promote the dialogue between the host and the teacher. Blended learning is also a combination of face-to-face teaching and online teaching, but it is not only part of social interaction.

The use of the internet in learning or what we usually call E-learning is increasingly in demand by many students. The existence of e-learning helps anyone to learn regardless of time and place. However, some students still need face-to-face meetings in class to discuss and complete the learning process that has been through the internet. This is called Blended Learning. So that the notion of Blended Learning itself is a learning method where the face-to-class learning

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<sup>1</sup> 'Pengertian Dan Manfaat Model Pembelajaran Blended Learning', PT. Sentra Vidya Utama, 2 August 2018, <https://sevima.com/pengertian->

[dan-manfaat-model-pembelajaran-blended-learning/](#).



process combines with the e-learning process in harmony.

Classroom learning and e-learning each have their own advantages and disadvantages that is what underlies the formation of this Blended Learning method. For example, learning deficiencies in class tend to be limited by place and time, but the advantage is that by meeting the teacher, students can immediately get feedback from the teacher on the achievements they have made. Likewise, learning to use the internet is indeed not limited by place and time, but without a teacher to accompany it, participants do not immediately receive feedback and tend to experience misunderstanding. So by combining the two methods, blended learning can be the answer to learning methods that are becoming trends in the future.

E-learning or e-learning method is a teaching method that uses electronic media and the Internet as an intermediary in the teaching process. At the same time, blended learning is a teaching method that combines, combines, and merges the traditional education system with all digital systems.

E-learning and blended learning have similarities because they use computers and the Internet as intermediaries. However, e-learning and blended learning are different learning methods. In the case of using e-learning methods, there is no reciprocal relationship in the teaching process. At the same time, through the mixed learning method, direct interaction in the form of direct discussion in the teaching process.

Before adopting the blended learning method, there was already a very familiar method, namely e-learning. However, in the implementation process, e-learning is far from enough, because there are still various obstacles. With e-learning, there will be no interaction during the learning process. The teaching process of course requires a system that can perform a two-way process. Of course, feedback is needed to make the learning results better and more perfect. Although a lot of materials can be obtained through the use of e-learning, the learning process that can be carried out anytime, anywhere is still not so effective and efficient.

The development of blended learning aims to improve e-learning methods. Through the equalization of education in

Indonesia, e-learning and blended learning can become solutions to the education problems in Indonesia. Indonesia's education system is implementing e-learning methods and turning them into blended learning.

Why is it recommended to use blended learning, because the next steps of e-learning here are the benefits of blended learning<sup>2</sup>:

#### 1. Flexible

By using the blended learning method, students do not have to come to class every day. Learning can be done via the internet, then one day a week there is a meeting with teachers / lecturers in the classroom, to get feedback on what has been learned.

#### 2. Save Cost & Time

Using the Blended Learning method saves more money and time. Learning to use the internet does not have to have a physical book because the material is available online and participants only need to download. In addition, students can also save time because they do not need to pay to come to campus, by studying the blended learning method you can save on transportation costs to go to campus several days a week.

#### 3. Interactive Material

The subject matter presented via the internet is made into interactive media to make it more detailed and attract participants' attention. The learning media can be used according to the way each participant learns. For example, through interactive videos, explanatory videos from lecturers, podcasts and written materials in e-book format. All this is coupled with various live sessions, online chat with lecturers and various other technological supports.

#### 4. Effective and Efficient

Every student has a different way of learning from one another. There are participants who are comfortable studying in the morning, evening or even studying at night while relaxing and listening to music. There are also students who are more comfortable studying in their own room, in a coffee shop or in a classroom. That way, using this blended learning method, students can manage their own learning time and place.

Blended learning allows the students to have the experience to study like in offline learning by studying together on online platform that we going to explain it on the Mobile learning Explanation. We

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<sup>2</sup> Suyono & Hariyanto, 'Belajar Dan Pembelajaran', 2011,

<https://www.youtube.com/watch?v=fym4DXFBnRw>.

still have the opportunity to communicate synchronically with the teacher and other student. The teacher will spend the rest of the learning time for doing the offline learning by giving them some assignment or home project. The project will be explained in the STEAM learning explanation. Here are the steps to be follow in Blended Learning ;

1. Determine the type and materials of the teaching materials.

Educators must fully understand what types of textbooks are suitable for distance education (PJJ), some of which are face-to-face and online or web-based learning methods. Teachers use some platforms to select materials and media suitable for delivery, and these platforms will be explained in the mobile learning course.

2. Determine the blended learning design used.

Learning design must be carefully designed and carefully designed, and must also have the help of e-learning experts. The purpose of this is to make the learning design carried out truly relevant and make face-to-face and distance learning systems easier, rather than making it difficult for students or other educators to provide education. The things to consider when

designing blended learning are (a) how to introduce the textbooks, (b) which textbooks are mandatory, and which textbooks are recommended to enrich the knowledge, (c) how can students use the components of both learning, (D) What supporting factors are needed, for example, what software to use, group work or individual work.

3. Determine the online learning format.

Regardless of whether the teaching materials are provided in the form of PDF or video, teachers must also be notified of what hosting service to use, whether it is Yahoo, Google, Facebook, WhatsApp, Instagram or others. Further content will be explained in the "mobile learning" section.

4. Conduct tests on the designs made.

This test is performed to determine whether the learning system is working well. From the perspective of effectiveness and efficiency, we must pay attention to whether this will make students and teachers feel difficult, or even make learning easier.

5. Organizing blended learning well.

In the past, teachers or lecturers have socialized this system. Start by introducing the homework of each

educational part, how to obtain teaching materials, etc. The teachers or lecturers here are promoted officials, because those who participate in the implementation of blended learning will be biased by their own party or even other parties. Strictly follow the contract. A meeting will be divided into two sessions. The first section will be online teaching. The second section will be the family project. The STEAM learning conference will further explain the details of the home project.

#### 6. Preparing criteria for conducting evaluations.

Evaluation is critical to teachers, making it a feedback for successful teaching used by teachers. The evaluation should meet the following criteria: (a) easy to navigate; (b) content/substance; (c) layout/format/appearance; (d) interest; (e) applicability; (f) cost-effectiveness/value.

Ease to navigate, how easily students can access all the information provided in the learning package. The criteria are, the easier it is to access, the better. Content / substance, what is the quality of the content used. For example, how the instructions for studying the teaching material were prepared, and were in

accordance with the learning objectives, and so on. The criteria: the closer to the content of the teaching material with the learning objectives, the better. Layout / format / appearance, learning packages (materials, instructions, or other information) are presented in a professional manner. The criteria: the better the presentation of the teaching materials, the better. Interest, in terms of how much the learning package presented is able to attract students to learn. The criteria: the more interested students are in learning, the better. Applicability, how far the learning package can be easily practiced. The criteria: the easier is the better. Cost-effectiveness / value, how cheap it will cost to join the learning package. The criteria: the cheaper the better<sup>3</sup>.

Because our discussion is about BMS Collaborative learning the evaluation will be done after the whole BMS collaborative learning done and resulting a product.

#### 7. Mobile Learning

Mobile learning (m-learning) is a learning model that uses cellular technology and mobile devices (HP) as a learning medium. M learning is developed

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<sup>3</sup> Suyono and Hariyanto, *Belajar Dan Pembelajaran* (ROSADA, 2011).

in a multimedia format that can display text, images, audio, and minimizes videos and animations due to the limited content size, so it can be easily accessed through a mobile phone, making it interesting and easy to understand learning materials. Mobile learning is an alternative learning model whose characteristics have nothing to do with time and place. In view of the ever-evolving dynamics and the trend of the mobile society and the demand for high-quality and diversified education needs, the potential and prospects for the development of mobile learning in the future are very broad. It is expected that the concept of learning will encourage the creation of an effective and innovative learning atmosphere, thereby inspiring the enthusiasm of students and teachers to learn.

The development of science and technology is so rapid and affects human life from various aspects, be it political, social, legal, economic, educational and other aspects. The rapid development of this technology must be accompanied by superior human resources and better quality education. Therefore, the progress and decline of a nation depends on how

education is understood. Therefore, innovations are needed to help improve and develop this nation into a more advanced nation so that it can compete with other nations. In order to achieve this goal, positive innovation is needed, especially in the field of education. Various kinds of innovations have been carried out and developed at this time, such as developing modules, models and learning media, but they are still lacking. For this reason, it is necessary to develop new learning media which can also be used as a learning resource. One of them is a Mobile device. Mobile is so important and very close to human life. Mobile can not only be used as a means of communication but can also be used in the world of education as a medium and learning resource. Mobile can make learning more flexible without being limited by certain space and time. The purpose of writing this article is to: explain what mobile learning is, the role of mobile learning in education or learning, the benefits, functions and advantages of mobile learning in learning<sup>4</sup>.

Mobile learning is a further detail of e-learning. As mentioned above, e-learning shortens the learning time and makes the

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<sup>4</sup> Deni, *Mobile Learning. Sebuah Aplikasi Teknologi Pembelajaran* (Jakarta: Rajawali Pers, 2016).

learning cost more economical. E-learning facilitates the interaction between students and materials, students and lecturers/teachers/instructors, and classmates. Students can share information with each other and can access learning materials anytime, anywhere. In this case, students can further strengthen their mastery of learning materials. E-learning may be one of the solutions to this pandemic situation. E-learning provides teaching essays through electronic platforms such as videos, power sources, and quizzes, which can be given at a distance. E-learning only allows one meeting between the teacher and the student. Students learn independently through given electronic materials. In e-learning, the teacher or teacher attendance factor automatically decreases or doesn't even exist. The presence of teachers as living beings who can interact directly with students has disappeared from these e-learning electronic spaces. This is what characterizes the lack of bad e-learning. As the origin of learning which consists of e (electronic) and learning (learning), this system has advantages and disadvantages. The mobile learning has the ability to encounter the disadvantages of E Learning.

Mobile learning is defined as the intersection of mobile computing and e-

learning accessible resources wherever you are, powerful search functions, rich interactivity, strong support for effective learning, and performance-based evaluation. E-learning has nothing to do with location in time or space. Based on this definition, mobile learning is a learning model that uses information and communication technology. In this learning concept, the benefits of mobile learning are the availability of teaching materials that can be accessed at any time and the visualization of interesting materials. It is important to note that not every textbook is suitable for mobile learning.

The term m-Learning refers to the use of mobile and mobile information technology (IT) devices (such as PDAs, mobile phones, laptops, and tablets) in teaching. Mobile learning (m-Learning) is a part of e-Learning, so it is also a part of distance learning (d-Learning). Some important functions that m-Learning learning tools must provide include the ability to connect with other devices (especially computers), the ability to present learning information, and the ability to achieve bilateral communication between teachers and students. M-Learning is unique learning because learners can access learning materials, directions and applications related to learning anytime,

anywhere. This will increase the focus on learning materials, make learning ubiquitous, and stimulate learners' motivation for lifelong learning. In addition, compared with traditional learning, mobile learning provides more opportunities for temporary collaboration and informal interaction between learners.

Mobile learning is a new paradigm in the field of learning. This learning model seems to be a response to developments in the fields of information and communication technology (especially information technology and mobile communications), which are developing rapidly. In addition, it cannot be denied that at this time, the mobile communication device is one of the devices attached to the daily life of learning participants such as teachers and students. The mobile learning application is currently under development and is being reviewed by experts<sup>5</sup>.

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#### **a. The procedure of mobile learning Application**

Mobile learning applications are indeed very suitable for learning, but there are also some textbooks that are not suitable for using mobile learning concepts, including: "hands-on" materials, dental skills, music (especially composition), interview skills, teamwork (such as marketing) and needs Expressed material (e.g. dance). Taking into account the above situation, the application of mobile learning is better at the higher education level.

#### **b. The Concept of Mobile Learning**

The concept of mobile learning focuses on providing virtual learning courses that allow interaction between teachers and students. Interaction includes

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<sup>5</sup> 'What Is Mobile Learning (M-Learning)? | Easy LMS', accessed 23 March 2021, [https://www.easy-lms.com/knowledge-](https://www.easy-lms.com/knowledge-center/lms-knowledge-center/mobile-learning/item10388)

[center/lms-knowledge-center/mobile-learning/item10388](https://www.easy-lms.com/knowledge-center/lms-knowledge-center/mobile-learning/item10388).

providing teaching materials, discussion space, assignment of assignments and assessment reports.

The technology used should be effective in teaching and should be considered updated. In addition, the selected technology should be easily available and should be evenly distributed between students and teachers<sup>6</sup>.

Assessing readiness is an activity that needs to be completed. This is due to the readiness related to the successful implementation of mobile learning. In the context of implementing mobile learning, readiness can be understood as the willingness and ability to organize and participate in mobile learning.

Mobile learning readiness concerns all stakeholders related to mobile learning applications, including teachers, students, organizers or educational institutions, and the government as a provider of infrastructure and regulations. Teachers are expected to be willing to use information and communication technology<sup>7</sup>. The willingness to accept information and communication

technology is the starting point that influences other readiness factors (ie, ICT literacy). The willingness to accept technology will affect the willingness to use and learn information and communication technology in the teaching process. ICT literacy is the technical and cognitive ability of teachers to use information and communication technologies in the teaching process.

Students play an equally important role as teachers in the learning process. Students' willingness to accept technology is also a dimension of readiness that needs to be measured. While the dimensions of ability include ICT literacy, media access, and purchasing power of students in accessing learning materials. ICT literacy is related to the technical and cognitive abilities of students in using information and communication technology<sup>8</sup>.

### **c. Mobile learning has its advantages**

The development of technology has created various breakthrough developments in learning. In this development process, learners (learners)

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<sup>6</sup> Bambang Warsita, 'MOBILE LEARNING SEBAGAI MODEL PEMBELAJARAN YANG EFEKTIF DAN INOVATIF', *Jurnal Teknodik* 14, no. 1 (6 September 2018): 062–073, <https://doi.org/10.32550/teknodik.v14i1.452>.

<sup>7</sup> 'M-Learning', in *Wikipedia*, 11 February 2021, <https://en.wikipedia.org/w/index.php?title=M-learning&oldid=1006116215>.

<sup>8</sup> 'Mobile-Learning (m-Learning) – Dosen Perbanas', accessed 19 January 2021, <https://dosen.perbanas.id/mobile-learning-m-learning/>.



intersect with mobile communication technology devices, and Internet technology has become a new trend that allows mobile learning or, more generally, the use of mobile devices (especially mobile phones) for mobile Learning (m learning). The combination of telecommunications and Internet technology allows the development of a mobile learning or m-learning system that uses mobile devices on the client side to interact with the server side (ie Web server).

Mobile learning can be used anytime, anywhere. Most mobile devices are cheaper than desktop PCs. Smaller and lighter than desktop computers. It is estimated that it can include more learners, because mobile learning uses technologies commonly used in daily life. In e-learning, the independence of time and place is an important factor that is often emphasized. However, in traditional e-learning, the minimum requirement is still a PC, as a result, the independence of time and place cannot be fully satisfied. This independence cannot be achieved by using a laptop computer (portable computer), because the independence of time and place actually

means that a person can study anytime and anywhere where learning materials are needed<sup>9</sup>.

#### **d. Disadvantages of mobile learning**

Mobile learning is one of the potential alternative ways to expand educational opportunities. However, there is not much information about the use of mobile devices (especially mobile phones) as learning media. Considering that the level of ownership and usage is already high, it is unfortunate that it is not directly used for education. In addition, there is currently little development of mobile device-based learning content that can be widely accessed. Most of the content circulating in the market is still dominated by lack of educational entertainment content, and most of it is produced from abroad, with a different cultural background from my country. This reality raises the need for content/application development based on mobile devices, which are becoming more and more diverse, inexpensive and easy to access.

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<sup>9</sup> Musahrain Musahrain, Nunuk Suryani, and Suharno Suharno, 'Pengaplikasian Mobile Learning sebagai Media dalam Pembelajaran', in *Seminar Nasional Teknologi Pendidikan 2017*

(Seminar Nasional Teknologi Pendidikan 2017, Sebelas Maret University, 2017), <https://www.neliti.com/publications/172247/>.

The factors restricting the use of m-learning are mainly related to equipment limitations. Currently, most mobile devices have limited display screens, storage capacity, and power limitations. Mobile learning also has a different learning environment from online learning or regular learning. In m-learning, learners use m-learning more in their spare time or free time, so the time for access to learning is also limited.

This causes learning content to be specially designed and cannot be automatically adopted from e-learning or traditional learning modules. The research that currently exists still explores the technical aspects of software development and has not yet explored other aspects related to reusability and aspirations. Pedagogical ecology and other aspects, so that further research that is more specific is needed. This research shows that Java technology can be used as an enabler of the use of m-learning. Java is also a platform and device independent software category so that more devices can run Java applications.

## **8. STEAM Learning**

Efforts to align Indonesia with developed countries are not as easy as

turning back the field, although the potential exists, it must be accompanied by hard work from now on. Competitive and productive are the keys to victory to become a developed country. However, it can be achieved if the potential of our human resources gets optimal attention from all fronts, including parents, society, especially the government, so that future generations can truly face challenges that have never been experienced before. The concept of education that focuses on the aspects of collaboration, directs students to think critically, creatively, innovate and seek solutions (problem solving), which is international based on Indonesian moral and cultural values. Therefore, to give birth to future generations who are ready to face all challenges, a learning approach is needed that emphasizes direct practice. The learning approach that leads to direct practice cannot be separated from the involvement of the environment as a vehicle for learning as a direct object. In line with the above, which is related to active learning, innovative and critical thinking is in line with the concept of STEAM learning (Science, Technology, Engineering, Art and Mathematic) where the main concept is

practice as important as theory<sup>10</sup>. It means you have to use your hands and your brain to learn. If students only learn theory in the classroom, they will not be able to keep up with the changing dynamic world. The main feature of STEAM is a learning center for different subjects, where student can use their hands and brains. Students must practice the knowledge they learn<sup>11</sup>.

The World of Students is inseparable from playing activities and almost all students' play activities use Home projects. The home projects used are specially made by educators and some can be purchased on the market to meet students' playing needs<sup>12</sup>.

Home projects intended for students that can attract students' interest. Safe and comfortable to use so that it can fulfill the child's play instincts. It is different from playing tools in general, because besides making students safe and

comfortable, the educational element also needs to be one of the things that need attention<sup>13</sup>.

Home project specifically designed for educational purposes. With regard to play tools for early childhood, the definition of HOME PROJECT is a home project designed for the purpose of stimulating the entire scope of students' development in order to get pleasure, comfort and safety<sup>14</sup>.

HOME PROJECT for students is a playmate, with HOME PROJECT students can create something that is in their mind, even though without being guided by an adult the child can use it according to what is in their natural world. However, in order for its use to be more precise and the educational elements contained in an HOME PROJECT, it needs assistance from adults.

The World of Students is inseparable from playing activities and

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<sup>10</sup> 'STEAM, Metode Pengajaran Untuk Menghadapi Revolusi Industri 4.0 Halaman All - Kompas.Com', accessed 23 March 2021, <https://edukasi.kompas.com/read/2020/01/16/15231941/steam-metode-pengajaran-untuk-menghadapi-revolusi-industri-40?page=all>.

<sup>11</sup> 'Sekolah di Masa Corona Dengan Metode STEAM yang Efektif', *Kelas Pintar* (blog), 6 August 2020, <https://www.kelaspintar.id/blog/edutech/sekolah-di-masa-corona-dengan-metode-steam-yang-efektif-6122/>.

<sup>12</sup> 'Prosedur Blended Learning Dalam Pembelajaran, Model-Model Pembelajaran Berbasis Komputer', *Pengertian, Fungsi, Dan Sejarah Media Televisi* (blog), accessed 19 January 2021, <http://berbasistik.blogspot.com/2015/09/pengertian-fungsi-dan-sejarah-media.html>.

<sup>13</sup> 'STEAM, Sebuah Pendekatan Pembelajaran Berbasis Seni', *BINUS University* (blog), accessed 23 March 2021, <https://binus.ac.id/knowledge/2019/03/steam/>.

<sup>14</sup> Warsita, 'MOBILE LEARNING SEBAGAI MODEL PEMBELAJARAN YANG EFEKTIF DAN INOVATIF'.

almost all students' play activities use Home projects. The home projects used are specially made by educators and some can be purchased on the market to meet students' playing needs<sup>15</sup>.

Home projects intended for students that can attract children's interest. Safe and comfortable to use so that it can fulfill the child's play instincts. It is different from playing tools in general, because besides making students safe and comfortable, the educational element also needs to be one of the things that need attention<sup>16</sup>.

The Educate Home project is a home project specifically designed for educational purposes. With regard to play tools for early childhood, the definition of HOME PROJECT is a home project designed for the purpose of stimulating the entire scope of students' development in order to get pleasure, comfort and safety<sup>17</sup>.

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The World of Students is inseparable from playing activities and almost all students' play activities use Home projects. The home projects used are specially made by educators and some can be purchased on the market to meet students' playing needs<sup>18</sup>.

Home projects intended for students that can attract students' interest. Safe and comfortable to use so that it can fulfill the child's play instincts. It is different from playing tools in general, because besides making students safe and comfortable, the educational element also

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<sup>15</sup> *Mobile Learning. Sebuah Aplikasi Teknologi Pembelajaran.*

<sup>16</sup> Abidin Abidin, Rumansyah, and Arizona K, 'Pembelajaran Online Berbasis Proyek Salah Satu Solusi Kegiatan Belajar Mengajar Di Tengah Pandemi Covid-19', *Jurnal Ilmiah Profesi Pendidikan*, 5(1), 2620-8326. <https://doi.org/10.29303/jipp.v5i1.111>, 23 July 2020.

<sup>17</sup> Siti Wahyuningsih et al., 'Efek Metode STEAM Pada Kreatifitas Anak Usia 5-6 Tahun', *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini* 4 (28 November 2019): 305, <https://doi.org/10.31004/obsesi.v4i1.305>.

<sup>18</sup> 'Perbedaan Blended Learning Dan E-Learning', PT. Sentra Vidya Utama, 7 August 2018, <https://sevima.com/perbedaan-blended-learning-dan-e-learning/>.

needs to be one of the things that need attention<sup>19</sup>.

The strategy that I did in this lesson was to use the STEAM method (Science, Technology, Engineering, Arts, and Mathematics) with STEAM taught children to think comprehensively. So learning the STEAM method with loose part materials is a method that uses teaching materials that come from used materials that are easily moved, manipulated and how to use them is determined by the child<sup>20</sup>.

The STEAM learning helps the students to some of this characteristics:

1. The students will have a Critical thinking. Its helping children to ask questions. They will be very communicative
2. Students will be very creative and increase the level of creative and imaginative mind of students
3. Collaborative students. The teacher may give a group home project so they can collaborate it with friends
4. The child becomes more physically active
5. More economical and easy to get

6. Encourage children to solve problems

7. Find new ways of doing things.

So, for the half session of the meeting the teacher is going to give a home project. Home project should be very productive. Should create some product dealing to the Science, Technology, Engineering, Art and mathematic. You can make a cake, a cook, you can make diy project, make a video, make research report, social project or public relation project<sup>21</sup>.

#### **E. BMS Collaborative Learning**

BMS collaborative learning is the learning that collaborate all the Blended Learning, Mobile Learning and STEAM learning together in one to overcome this pandemic. First, the teacher do the online meeting by mobile learning by using some online and synchronous platform like: WhatsApp, zoom, YouTube, Telegram, messenger or anything in condition that those application are use synchronically and directly even though it is still online not offline . The online learning by mobile learning will be continued with the follow up of offline by giving them a home project. The home project is a part of blended

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<sup>19</sup> *Mobile Learning. Sebuah Aplikasi Teknologi Pembelajaran.*

<sup>20</sup> 'Perbedaan Blended Learning Dan E-Learning'.

<sup>21</sup> 'Pengertian Dan Manfaat Model Pembelajaran Blended Learning'.

learning which the second session of it is giving them the offline project. So it is a blended of online and offline. Home project should be dealing with the STEAM learning. So on offline learning they have the opportunity to create a product on science, technology, engineering, art and math<sup>22</sup>.

## F. Conclusion

The BMS collaborative learning is very relevant to be use during the pandemic. While teacher and the students should study on the obligation to keep the social distancing than this learning is very recommended. The most probable learning to have is online learning. But, doing just online learning is not enough we don't know whether the student is understand the lesson or not. We won't be able to communicate with them. To make sure that, we should use the online learning which is able to make them communicate with us like an offline meeting or like a usual meeting class than blended learning should be combined with the Mobile learning. But, combining both are not enough without resulting a product that make the teaching learning is meaningful<sup>23</sup>.

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